

1. A method of processing an out of band control command executed by a host computer in a multi-path system, including the host computer, a device and multiple paths coupling the host computer to the device, the out of band control command identifying a target address in the device, the out of band control command further identifying, from among the multiple paths, a target path for transmission of the out of band control command between the host computer and the device, the method comprising steps of:

5 (A) selecting a selected path for transmitting out of band control command between the host computer and the device, the selected path being selected from among the multiple paths based upon a selection criteria that enables the selected path to be other than the target path identified by the out of band control command; and

10 (B) transmitting the out of band control command between the host computer and the device over the selected path.

15 2. The method of claim 1, wherein the device is a data storage system, wherein the out of band control command requests access to information stored on the data storage system, and wherein the step (B) includes a step of transmitting the information between the host computer and the data storage system over the selected path.

20 3. The method of claim 2, wherein the multi-path system further includes a second computer that is coupled to the data storage system, wherein the data storage system includes a shared storage region shared by the host computer and the second computer, wherein the target address specifies the shared storage region, and wherein the step (B) includes a step of transmitting the information between the host computer and the shared storage region over the selected path.

25 4. The method of claim 1, wherein the step (A) includes a step of selecting the target path as the selected path when the target path is operational, and selecting a different one of the multiple paths as the selected path when the target path is non-operational.

30 5. The method of claim 4, wherein the step (A) further includes a step of automatically selecting the different one of the multiple paths when the target path is non-operational, without intervention of a system administrator.

6. The method of claim 1, wherein the step (A) includes a step of selecting the selected path based upon a selection algorithm that distributes, among the multiple paths a load of operations passing between the host computer and the device.

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7. The method of claim 1, wherein the step (A) includes a step of selecting the selected path based upon a state of previously assigned operations queued for transmission from the host computer to the device over the multiple paths.

10. 8. A computer readable medium encoded with a program for execution on a host computer a multi-path system including the host computer, a device and multiple paths coupling the host computer to the device, wherein the host computer executes an out of band control command identifying a target address in the device, the out of band control command further identifying, from among the multiple paths, a target path for transmission of the out of band control command between the host computer and the device, the program when executed on the host computer, performs a method comprising steps of:

15 20 (A) selecting a path for transmitting the out of band control command between the host computer and the device, the selected path being selected from among the multiple paths based upon a selection criteria that enables the selected path to be other than the target path identified by the out of band control command; and
(B) transmitting the out of band control command between the host computer and the device over the selected path.

25 9. The computer readable medium of claim 8, wherein the device is a data storage system, wherein the out of band control command requests access to information stored on the data storage system, and wherein the step (B) includes a step of transmitting the information between the host computer and the data storage system over the selected path.

30 10. The computer readable medium of claim 9, wherein the multi-path system further includes a second computer that is coupled to the data storage system, wherein the data storage system includes a shared storage region shared by the host computer and the second computer,

wherein the target address specifies the shared storage region, and wherein the step (B) includes a step of transmitting the information between the host computer and the shared storage region over the selected path.

5 11. The computer readable medium of claim 8, wherein the step (A) includes a step of
selecting the target path as the selected path when the target path is operational, and selecting a
different one of the multiple paths as the selected path when the target path is non-operational.

10 12. The computer readable medium of claim 11, wherein the step (A) further includes a step
of automatically selecting the different one of the multiple paths when the target path is non-
operational, without intervention of a system administrator.

15 13. The computer readable medium of claim 8, wherein the step (A) includes a step of
selecting the selected path based upon a selection algorithm that distributes, among the multiple
paths, a load of operations passing between the host computer and the device.

20 14. The computer readable medium of claim 8, wherein the step (A) includes a step of
selecting the selected path based upon a state of previously assigned operations queued for
transmission from the host computer to the device over the multiple paths.

25 15. A host computer for use in a multi-path system including the host computer, a device and
multiple paths coupling the host computer to the device, the host computer comprising:
at least one processor to execute an out of band control command identifying a target
address in the device, the out of band control command further identifying, from among the
multiple paths, a target path for transmission of the out of band control command between the
host computer and the device; and

30 at least one controller that:
selects a selected path for transmitting the out of band control command between
the host computer and the device, the selected path being selected from among the
multiple paths based upon a selection criteria that enables the selected path to be other
than the target path identified by the out of band control command; and

transmits the out of band control between the host computer and the device over the selected path.

16. The host computer of claim 15, wherein the device is a data storage system, wherein the
5 out of band control command requests access to information stored on the data storage system, and wherein the at least one controller transmits the information between the host computer and the data storage system over the selected path.

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17. The host computer of claim 16, wherein the multi-path system further includes a second
10 computer that is coupled to the data storage system, wherein the data storage system includes a shared storage region shared by the host computer and the second computer, wherein the target address specifies the shared region, and wherein the at least one controller transmits the information between the host computer and the shared storage region over the selected path.

15 18. The host computer of claim 15, wherein the at least one controller selects the target path as the selected path when the target path is operational, and selects a different one of the multiple paths as the selected path when the target path is non-operational.

19. The host computer of claim 18, wherein the at least one controller automatically selects
20 the different one of the multiple paths when the target path is non-operational, without intervention of a system administrator.

20. The host computer of claim 15, wherein the at least one controller selects the selected path based upon a selection algorithm that distributes, among the multiple paths, a load of
25 operations passing between the host computer and the device.

21. The host computer of claim 15, wherein the at least one controller selects the selected path based upon a state of previously assigned operations queued for transmission from the host computer to the device over the multiple paths.

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22. The host computer of claim 15, wherein the at least one controller includes:

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means for selecting a selected path for transmitting the out of band control command between the host computer and the device, the selected path being selected from among the multiple paths based upon a selection criteria that enables the selected path to be other than the target path identified by the out of band control command; and

5 means for transmitting the out of band control command between the host computer and the device over the selected path.